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ABSTRACT

The Napa Project is a demonstration research study developed to evaluate the effectiveness of seven school-based substance abuse prevention strategies. Various programs were offered to over 7,000 students in grades three through nine. Four programs were delivered to students by regular classroom teachers and two programs were offered as elective courses. These six programs did not address the topic of substance abuse, focusing instead on factors believed to underlie substance abuse (self-esteem and school attitudes). The seventh program was a drug education course which taught students relevant competencies and provided information about the consequences of drug use. Thirteen studies were conducted to evaluate the effects of the individual programs as well as the cumulative effects of several programs delivered to students over a 2- to 3-year period. The results revealed that the drug education course had some positive effects on students' drug knowledge and drug involvement, and their perceptions of peers' attitudes toward drugs and drug use. These effects occurred primarily for girls, and they did not replicate across studies. None of the other programs was found to be effective. The results of these studies question the value of "generic" approaches to substance abuse prevention. This report describes the strategies and discusses the designs, results, and implications of the various studies. Reports on the individual studies are listed in the appendix. (NB)

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# THE NAPA PROJECT, 1978-1981

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The Napa Project: Executive Summary

Pacific Institute for Research and Evaluation

The Napa Project was funded by the National Institute on Drug Abuse to evaluate seven school-based substance abuse prevention programs. The programs were consistent with a prevention approach that focused on improving school and peer group influences along with student attitudes and competencies. Four programs were delivered to students by regular classroom teachers who had received special in-service education, and two programs were offered as elective courses. These six "generic" programs did not address the topic of substance abuse; rather, they focused upon factors believed to underlie substance abuse (e.g., self-esteem, attitudes toward school). The final program, a drug education course, taught students relevant competencies and provided information about the consequences of drug use. The specific programs were:

- Magic Circle--teachers were prepared to lead structured small-group discussions on particular topics (grades 3-4);
- Effective Classroom Management-Elementary--teachers were trained in communication skills, discipline techniques, and self-concept enhancement techniques (grades 4-6);
- Effective Classroom Management-Junior High--above program adapted for junior high environment (grades 7-9);
- Jigsaw--teachers were trained to organize students into small learning groups in which each student taught part of the regular curriculum to other group members (grades 4-6);
- Cross-Age Tutoring--elective course in which students learned teaching skills and tutored younger children in academic subjects (grades 8-9);
- Operating a School Store--elective course in which students operated a store on their campus and learned relevant business skills (grades 8-9);
- Drug Education--students learned a systematic decision-making process, a framework for understanding their needs and motives, commercial advertising techniques, assertiveness skills for dealing with peer pressure, and were provided information about drugs (grades 7-8).

The research was conducted in the Napa Valley (CA) Unified School District. Over 7000 students participated in 13 studies that evaluated the effects of the individual programs as well as the cumulative effects of several programs delivered to groups of students over a two- to three-year period. In each study data were collected at pretest, posttest and follow-up from a control group as well as from the group that received the program. School-related outcomes were assessed, such as self-esteem and academic achievement, in addition to drug-specific outcomes, such as drug attitudes and drug use. The implementation of the programs was assessed through student or teacher reports and classroom observations.

The drug education course had some positive effects on participants' drug knowledge and drug involvement, and their perceptions of peers' attitudes toward drugs and drug use. However, these effects occurred primarily for girls, and they did not replicate across studies. None of the other programs was found to be effective. The results call into question the value of "generic" approaches to substance abuse prevention.

The policy implications of this project are important. The project shows that rigorous evaluation of prevention programs is indeed feasible and worthwhile, and it suggests many ways of improving evaluation methods. It also shows that generic approaches may have little usefulness as prevention techniques, at least as they are being implemented by many programs today.

# NAPA PROJECT SUMMARY

September, 1983

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Current and former staff members of the Napa Project include Sara Adams, Terie Bryant, Jack Condon, Donna Davis, Gerald Martin, Martha McInnis, Lee Slimmon, and Patricia Tuck. Their efforts helped to make this research possible.

# INTRODUCTION

This report describes the Napa Project, a demonstration research study funded by the National Institute on Drug Abuse. The primary purpose of the project was to evaluate the effectiveness of seven school-based substance abuse prevention strategies. The project sought to answer the question, "What are the effects of these promising school-based prevention strategies when they are intensively and carefully implemented under favorable circumstances?"

One or more separate evaluations of each strategy were conducted during the course of the project. In other studies, called "Cohort" studies, two or three strategies were provided to the same group of students over two- or three-year periods. In the Cohort studies, the cumulative effects of the strategies were measured each year. All studies employed experimental or quasi-experimental designs in which students who received the strategies were compared with students who did not.

The following sections describe the strategies and discuss the designs, results, and implications of the various studies. Reports on the individual studies are listed in the appendix.

## INTERVENTIONS

### Background

In the 1970's, affective education and "alternatives"[1] programs became increasingly popular as substance abuse prevention strategies. The rise of these "generic"[2] strategies accompanied the decline in popularity of drug-specific informational approaches which were heavily laden with "scare tactics." Affective education was usually justified on the basis of the numerous correlational studies that found an association between social competencies, self-attitudes and values, and drug abuse (e.g., Ahlgren and Norem-Hebeisen, 1979; Smith and Fogg, 1978). It was generally believed that these attitudes and behaviors precede and thereby mediate drug abuse. Therefore, many affective education and alternatives strategies have focused on teaching intrapersonal and social competencies to children, and on creating environments that are responsive to children's emotional and social as well as their cognitive needs.

The curricula of affective education programs include self-esteem building, interpersonal skill development, and decision-making/problem-solving techniques. They also include methods for restructuring academic classroom activities in ways thought to promote learning and positive relationships. Common to the

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[1]Alternatives are defined as "constructive involvements that act as meaningful options to drug and alcohol use (Schaps and Slimmon, 1975)," and are based on the hypothesis that drug abuse can be prevented by providing more fulfilling experiences and activities.

[2]The terms "generic," "indirect," and "non-specific" all refer to prevention strategies which do not directly address the topic of substance abuse. Instead, they focus upon factors believed to underlie drug abuse and other problem behaviors.

various approaches is the assumption that teachers should be responsive to the affective as well as cognitive needs of students. Thus, teacher in-service is a staple of affective development programs for students.

The teaching of affective skills has been recently introduced in school-based drug education programs. These programs provide information about drugs and teach skills for utilizing and acting on the information (e.g., decision-making and assertion skills). Recent research on the prevention of cigarette smoking suggests that such courses may have lasting effects (Arkin et al., 1981; Botvin and Eng, 1982; Botvin et al., 1980; Evans et al., 1981; Flay et al., 1983; Hurd et al., 1980; McAlister et al., 1980; Perry et al., 1980).

Strategies

Each strategy selected for study met several criteria. First, each was consistent with a general approach that emphasizes school and peer group influences, and individual competencies and attitudes. Each was representative of current school-based prevention programs in affective education, alternatives programs, or drug education. Each could be implemented at moderate cost and without major changes in the priorities and constraints under which most public schools operate. Finally, each strategy could not involve serious physical or psychological risks to participants.

Where possible, established, "packaged" strategies were selected. Otherwise, project staff developed the curriculum for a strategy using elements from existing curricula and program materials.

Four of the strategies were in-service teacher training courses that focused upon classroom and individual factors thought to influence attitudes

toward school, self-esteem, and the development of social competencies. None of the courses addressed the topic of drug use. The in-service teaching training strategies were:

- Magic Circle--teachers were prepared to lead structured small-group discussions on particular topics in their classrooms (grades 3-4);
- Effective Classroom Management-Elementary (ECM-Elementary)--teachers were taught various communication skills, discipline techniques, and self-concept enhancement techniques (grades 4-6);
- Effective Classroom Management-Junior High (ECM-JH)--communication, discipline, and self-concept enhancement skills were adapted for teaching in the junior high environment (grades 7-9);
- Jigsaw--teachers were taught to organize classrooms into learning groups of five or six students in which each student teaches an essential piece of the regular curriculum to the other group members (grades 4-6).

Two alternatives were offered as elective academic courses to junior high school students. In the courses, students were taught skills and provided opportunities for helping peers or younger children. The courses did not address the topic of drug use; instead, they sought to strengthen constructive self-concepts and to teach social competencies. The alternatives strategies were:

- Cross-Age Tutoring--students tutored younger children on a regular basis in reading or other academic subjects (grades 8-9);
- Operating a School Store--students ran a school store on their campus, selling school supplies and snacks, while learning relevant business skills in a related academic course (grades 8-9).

The final strategy was a drug education course that taught drug information and social competencies to seventh graders. In the final version of the course, students were taught Maslow's (1980) framework for understanding motivation; analyzed techniques used in commercial advertising; learned a systematic

decision-making process; and learned assertiveness skills for dealing with peer pressure. Towards the end of the course, students were provided information about psychoactive substances with emphasis on tobacco, alcohol, and marijuana. Students also applied the social competencies in considering drug use issues.

Implementation

Process data gathered from students and teachers during initial implementations of the strategies were used to revise curricula and procedures for subsequent implementation. The ECM and Drug Education strategies were substantially revised, and the other strategies were modified in minor ways. Unless otherwise indicated, the following descriptions refer to the final versions of the strategies.

Teachers were trained in each in-service strategy through 9 to 12 weekly two-hour workshops. Several times during and after training, the trainer observed each teacher's use of the in-service skills in the classroom, providing additional encouragement and guidance. All of the in-service courses combined lecture, discussion, readings, simulations and practice exercises. At each training session, previously taught skills were reviewed, implementation problems were discussed, and new skills were introduced and practiced. All teachers who completed the training received a stipend, and graduate credit was offered.

The first version of the Cross-Age Tutoring course was offered each semester to eighth and ninth grade students, and was taught by a junior high school teacher assisted by project staff. The second course was offered to eighth grade students only, and was taught by project staff. The class met daily during the entire semester. Tutors traveled to nearby elementary schools to

work one-on-one or in small groups with younger students. They also met as a group to refine skills, discuss problems, and plan schedules. Project staff closely monitored the tutors' activities at the elementary schools. Tutors received grades and academic credit for their participation in the course.

The School Store class met daily and was taught by a junior high teacher with assistance from project staff. Teaching methods included lecture, demonstration, self-guided learning modules, experiential activities, simulations, and role-playing. Students volunteered some of their own time to work in the store. Each student participated in most aspects of store operations, including sales, marketing and accounting.

The 12 sessions of the Drug Education course were taught by a project staff member once per week in social studies classes. Instruction included lecture, demonstration, experiential activities, role-playing and audio-visual presentations.

## EVALUATION METHODS

The seven strategies were evaluated individually and in combinations in 12 studies. All studies assessed the implementation of the strategies as well as their effects upon students. The methods used in conducting the process and outcome evaluations are described in this section.

### Process Evaluation

In each study, process data were gathered to monitor implementation of the strategy and to assess participants' reactions.

In monitoring the in-service training sessions, teachers' attendance at each session was recorded; anonymous teacher ratings of each session were collected; teacher participation in the sessions was observed; and the agenda, content, and procedures of each session were documented. At the end of the training and at the end of the school year, the teachers were surveyed regarding their overall assessments of the course, the trainers, and the follow-up classroom visits by the trainers. Frequency and quality of classroom implementation of the strategies were monitored by: surveys of the teachers at mid-year and year-end; the trainer's classroom observations; classroom observations conducted by project research personnel; and in the case of Magic Circle and Jigsaw, weekly implementation logs provided by teachers

Participation in the alternatives strategies was monitored through trainer's observations of class sessions, and through observations of students during tutoring sessions and when working in the school store. Also, students

were surveyed at the end of each semester regarding their evaluations of the courses and their assessments of the tutoring or school store experiences.

The procedures and content of the drug education course were documented, and three surveys of students' reactions to the course were conducted after the fourth, seventh, and final sessions.

Outcome Evaluation

Table 1 summarizes the research designs for each of the 13 evaluation studies. The letters following each study identify the relevant reports as listed in the appendix. Table 1 shows:

- Average number of students per group used to assess main effects of interventions;
- Major testing and intervention activities in each project year;
- Students' grade level in each year of the study.

Also listed in Table 1 is an annual drug survey, administered to large samples of junior and senior high school students each spring.

Outcome evaluations of the in-service strategies employed schools as tne unit of assignment to treatment condition. Studies of Cross-Age Tutoring and School Store used random assignment of individual students to condition. Studies of Drug Education involved random assignment of classrooms to condition.

Students in the control and experimental groups received a pretest and posttest that assessed the following:

- The impact of each strategy on affective variables that were hypothesized to be causally related to substance abuse (see Table 2);
- The impact of the strategy upon specific measures of drug-use--attitudes toward use, intentions to use, lifetime use, and current use (see Table 2).

Follow-up testing was performed at the end of a second year in some of the studies. These follow-up assessments helped to determine whether initial effects of the strategy were maintained, or whether there were effects that became evident only after some time had passed.

Outcomes were assessed with the measures listed in Table 3. In Table 3, the designation "T" refers to information furnished by teachers, "S" to students, and "A" to archival records. Information obtained only in the elementary studies is designated "E" and information obtained only in the junior high studies is designated "J." All of the measures except one (drug knowledge) demonstrated adequate internal consistency reliability.

The data for each study were subjected to multiple analyses. In several elementary school studies and in the drug education studies, student data were first aggregated into classes and the class-level data were analyzed or a hierarchical analysis was conducted. In the other studies, student-level data were analyzed. Separate analyses were conducted for each sex and grade level. The treatment groups were compared at pretest by analyses of variance to examine potential biases due to initial nonequavalence and to attrition. The groups were contrasted at posttest by analyses of covariance that controlled for some pretest differences. Additional analyses examined the effects of differential exposure to the intervention utilizing multiple regression or analysis of variance.

Table 2

Variables Measured in Studies of Individual Prevention Strategies

| OUTCOME VARIABLES | STRATEGIES | | | | | | |
|---|---|---|---|---|---|---|---|
| | Magic Circle | ECM Elementary | ECM Junior High | Jigsaw | Cross-Age Tutoring | School Store | Drug Education |
| **Classroom School Environment** | | | | | | | |
| Teacher Attitudes/Satisfaction | x | x | x | x | | | |
| Faculty Cohesiveness | x | x | x | x | | | |
| Affective Teaching Climate | x | x | x | x | | | |
| Attitudes Toward School | x | x | x | x | x | x | |
| **Personal Satisfaction** | | | | | | | |
| Academic Self-Esteem | x | x | x | x | x | x | |
| Social Self-Esteem | x | x | x | x | x | x | |
| Attitudes Toward Peers | x | x | | x | | | |
| Locus of Control | x | x | x | x | x | x | |
| Academic Achievement | x | x | x | x | x | x | |
| Attendance | x | x | x | x | x | x | |
| Behavior Problems | x | x | x | x | x | x | |
| **Perceived Norms/Social Support** | | | | | | | |
| Perceived Peer Attitudes Toward School | x | x | x | x | x | x | |
| Perceived Peer Attitudes Toward Drugs | x | x | x | x | x | x | x |
| Perceived Prevalence of Drug Use | x | x | x | x | x | x | x |
| **Drug Attitudes** | | | | | | | |
| Acceptance of Licit and/or Illicit Use | x | x | x | x | x | x | x |
| Perceived Utility of Drug Use | x | x | x | x | x | x | x |
| Knowledge Regarding Drugs | | | x | | | | x |
| **Intentions Regarding Drug Use** | | | x | | x | x | x |
| **Behavior Regarding Drug Use** | x | x | x | x | x | x | x |

Table 3: Outcome Variables and Measures

| Variable | Measure |
|---|---|
| Teacher Attitudes | • Project-developed scales measuring role importance and role effectiveness (T) |
| Teacher Satisfaction | • Adapted from Purdue Teacher Morale Inventory (T) |
| Faculty Cohesiveness | • Adapted from Teacher Cooperation Scale of the Teacher Attitude and Classroom Climate Questionnaire and from Intimacy Scale of the Organization Climate Description Questionnaire (T) |
| Affective Teaching Climate | • Adapted from Interpersonal Relationships with Pupils and Authority and Control Scales of the School Sentiment Index and Teacher Affiliation Scale of the Self Observation Scales (S) |
| Attitudes Toward School | • Adapted from School Affiliation Scale of the Self Observation Scales (S) |
| Academic Self-Esteem | • Adapted from Scholastic Scale of the Self-Appraisal Inventory and the Self Observation Scales (S) |
| Social Self-Esteem | • Adapted from Social Confidence Scale of the Self Observation Scales (S) |
| Attitudes Toward Peers | • Adapted from Peer Affiliation Scale of the Self Observation Scales (S, E) |
| Locus of Control | • Adapted from I+ and I- Scales of the Intellectual Achievement Responsibility Questionnaire (S) |
| Academic Achievement | • Total Reading and Total Math Scales of the Stanford Achievement Test (A,E)<br>• Grade Point Average (A,J) |
| Attendance | • School district and school absenteeism records (A) |
| Behavior Problems | • Project-developed items measuring frequency and seriousness of classroom misbehavior (T,E)<br>• School Discipline Records (A,J) |

Table 3 (Cont.)

| Variable | Measure |
|---|---|
| Perceived Peer Attitudes Toward School | • Adapted from eight instruments measuring attitudes toward school (S) |
| Perceived Peer Attitudes Toward Drugs | • Project-developed scale measuring the degree to which students think their peers support the use of drugs (S) |
| Perceived Prevalence of Drug Use | • Project-developed scale measuring the degree to which students think their peers use different drugs (S) |
| Acceptance of Licit and Illicit Drug Use | • Project-developed scales assessing attitudes toward selected substances (S)<br>• Adapted from three instruments measuring attitudes toward licit and illicit drugs (S,J) |
| Perceived Utility of Drug Use | • Project-developed scales measuring perceived benefits and costs of use of selected drugs (S) |
| Knowledge Regarding Drugs | • Project-developed scale measuring drug Knowledge (S,J) |
| Intentions Regarding Drug Use | • Project-developed scale measuring anticipated use of various drugs (S,J) |
| Behavior Regarding Drug Use | • Project-developed scales measuring lifetime use and current use of various drugs (S) |

Note: Letters in parentheses refer to information furnished by teachers (T), by students (S), or to archival records (A). Information obtained only in the elementary studies (E) is further identified, as is that obtained only in the junior high studies (J).

# RESULTS

## In-Service Strategies

Between 53% (Jigsaw) and 93% (Magic Circle) of eligible teachers voluntarily enrolled in the in-service training course. Only a few of those enrolled failed to complete the training, and the participating teachers rated all of the in-service courses highly with respect to organization, usefulness, enjoyableness, and interest. They rated the trainers as knowledgeable, personable, and effective. They consistently attended the training sessions and they participated enthusiastically.

Regarding classroom teachers' implementation, the teachers' self-reports indicated that the skills were proving useful in their classrooms, and that they believed they were using the skills proficiently.[3] With Magic Circle, classroom observations showed that most teachers were able to conduct Circle sessions adequately. Teachers' logs indicated that on the average, students participated in one Circle per week. With ECM, researchers' observations failed to show classroom use of many skills. With Jigsaw, implementation averaged two hours per week according to teachers' logs, but observations showed that only a third of the teachers applied this strategy without modifications that substantially reduced or eliminated peer teaching and interdependence among students.

Outcome evaluation results showed that none of the strategies had consistent effects on teachers' satisfaction with teaching, faculty cohesiveness,

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[3] An exception was the problem-solving skills taught in the first version of the ECM strategies. The teachers found these too complicated and time consuming to master or use, and they were replaced with discipline skills in the revised versions of the strategies.

or teachers' attitudes toward educational objectives associated with each strategy. Nor did the studies show any of the strategies to have a pattern of significant effects on student outcomes. None had consistent effects on the mediating or the drug-specific variables. Furthermore, no patterns of positive effects were revealed by natural variation analyses which examined outcomes for students exposed to relatively high quality and/or quantity of implementation as compared with other students.

Alternatives Strategies

Process evaluation results showed that students favorably rated the Cross-Age Tutoring and School Store courses as compared with other elective courses. Students completing the courses reported that they had learned a lot, that they enjoyed the practical experience, and that they believed their efforts had been helpful to others. However, tutors tended to dislike their weekly class meetings, describing them as irrelevant, repetitive, and boring. Nearly one-fourth of the tutors dropped out of the course during the semester. Students in School Store reported liking both the daily class sessions and their work in the store. All completed the course. In the subsequent Cohort II study the Cross-Age Tutoring course was revised, and both courses were rated highly by students.

Neither course showed a pattern of significant effects on student outcomes. In particular, there was little evidence for enhancement of students' attitudes toward themselves or school, as originally anticipated. Follow-up testing after one year also failed to show any pattern of effects.

Drug Education Strategy

The process evaluation of the initial Drug Education course revealed that students and classroom teachers found the course too technical and fast-paced. Course ratings from students were mediocre in terms of usefulness, clarity,

interest, and enjoyableness. The course was revised for the subsequent studies and was well received by classroom teachers, highly rated by students, and appeared to be more successful at involving students in discussions and experiential activities.

The three evaluations of the Drug Education course showed it to have no pattern of effects on seventh grade boys, but provided some evidence of positive short-term effects on girls, as shown in Table 4. The first two studies showed short-term effects on girls' drug knowledge, and their perceptions of peer attitudes toward, or use of drugs. Short-term effects on girls' involvement in alcohol and marijuana use were also shown in the first study, and on cigarette involvement in the second study. However, most of these effects had dissipated by the follow-up. Furthermore, the effects did not replicate in the third study, which showed no effects. Taken together, these results suggest that the effects of the courses on girls are at best inconsistent and short-lived.

Cohort Studies

Experimental students in the Cohort I study received two years of Magic Circle followed by one year of Jigsaw. These students were in the fifth grade at the end of the third year. Third-year results showed no difference between experimental boys and boys in the control group. Several negative effects were found for girls but these probably were due to extraneous factors such as initial student differences.

Cohort II experimental students received ECM-Junior High and Drug Education as seventh graders, and ECM-Junior High as eighth graders. One-third also received Cross-Age Tutoring or School Store as eighth graders. Second-year

results showed that as compared to controls, experimental students had greater drug knowledge. Experimental girls were less involved in cigarette use and perceived that fewer of their peers were using drugs. Further analyses indicated that the effects were attributable to the Drug Education course (see Table 4 for first-year effects of this course upon Cohort II experimental girls).

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# APPENDIX: PROJECT REPORTS AND PUBLICATIONS

## EVALUATION REPORTS

### Drug Education

A. Schaps, E., Moskowitz, J., Condon, J. & Malvin, J. An evaluation of an innovative drug education program: First year results, July, 1981, 32 pp. (Revised). *ED 213738

Schaps, E., Moskowitz, J., Condon, J. & Malvin, J. Process and outcome evaluation of a drug education course. *Journal of Drug Education*, 1982, *12*, 353-364.

B. Moskowitz, J., Schaps, E., Malvin, J., Schaeffer, G. & Condon, J. An evaluation of an innovative drug education program: Follow-up results, November, 1981, 21 pp. *ED 231739

Moskowitz, J., Schaps, E., Malvin, J. & Schaeffer, G. The effects of drug education at follow-up. *Journal of Alcohol and Drug Education*, in press.

C. Moskowitz, J., Malvin, J., Schaeffer, G. & Schaps, E. An experimental evaluation of a drug education course. *Journal of Drug Education*, in press.

### Alternatives

D. Malvin, J., Moskowitz, J., Schaps, E. & Schaeffer, G. Evaluation of two school-based alternatives programs. *Journal of Alcohol and Drug Education*, in press.

### Effective Classroom Management

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